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NEVADA CLIMATE SUMMARY

Office of the State Climatologist

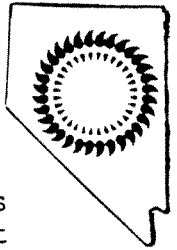
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SYNOPSIS

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December 1990 will be logged in climate record books as one of the coldest months since records were first kept in the Silver State over 100 years ago. In fact, it ranks right up there with the "Grand Daddy" of them all, January 1937, and the rest of the "Big Ten", January 1890, January 1913, January 1917, December 1924, December 1932, January 1949, December 1972, and February 1989. At least sixteen locations, with between 30 and 113 years of record, set new low temperature marks for any month, with 2-3 times that many just missing all time lows but establishing new minima for December. Also, the State's long-standing December low of -45, set in 1924 in San Jacinto was broken, as -46 was recorded at Mountain City during the peak of the pre-Christmas cold snap.

Added to the record cold was a continuation of the record drought that has plagued most of the State since the 1986-87 Water Year. December precipitation ranged from zero at several Central and Southern locations to a bit above normal in much of the Humboldt Drainage Area and a little of the Owyhee Area. With the first three months of the 1990-91 Water Year now history the ledger looks like this: precipitation is about 25% of normal in the South, 30% in the Tahoe-Truckee, Carson and Walker Areas, 60% in the Owyhee, and in Central Nevada, and 70% in the Humboldt, for an overall State average of only 50% of normal. In a normal year about 1/3 of the total annual precipitation falls in the western part of Nevada during the October--December period. This year that total was less than 10%!

TEMPERATURE

After a week or so of relatively mild temperatures, the mercury began falling, reaching all time record levels in many sites just before Christmas, with new December marks set at most other locations. The following table illustrates the enormity of the cold. In addition to the new State low for December of -46 at Mountain City, which was also the 2nd lowest temperatures ever recorded in Nevada, a couple of other items stand out. First, the records at Winnemucca (113 years long), Beowawe (102 years) and Mina (101 years), are among the longest in Nevada, going back into the 19th Century, but it has never been colder than it was in December, 1990. The -43 at Beowawe broke the -42 of December, 1924, with the -37 at Winnemucca edging out the -36 of January, 1937. At Mina the January 1890 low of -22 had stood until Judge Eugene Gates officially logged -23 in December 1990!

Second, the 60 year-long U.S. Bureau of Reclamation's Boulder City record is one of Nevada's few "bench mark" types, having moved very little in all those years. The previous low

there was 11 degrees set during the infamous cold of 1937. The mercury dropped to 9 degrees in December 1990, with 7 at Logandale in Moapa Valley (old record, 8 degrees in Jan. 1937), 3 degrees at Desert National Wildlife Refuge (old record, 8 in Jan 1963), and a record obliterating -2 at Pahrump (old record, 6 in Feb. 1989), as Forrest Smith at Pahrump's CalVada logged that area's first below zero reading. Temperatures even fell as low as the mid-teens on the shore of Lake Mead, where the water temperature dropped to an unusually chilly 54 degrees by month's end. This part of Nevada is generally not equipped for such severe cold, as homes and businesses are not built for it, clothes are not bought for it, and residents are not used to it, so much suffering goes along with this type of episode. In fact, in many areas of the State, broken pipes and attendant water damage, loss of heating, frozen vehicles, loss of wildlife and domestic stock, etc., caused millions of dollars of damage.

Statewide, departures from normal temperature ranged from 12-13 degrees below normal in the northeastern corner of Nevada, and in the Lower Humboldt River Area, to only 5-6 degrees below normal in the Sierra Nevada East Slope Watersheds and in parts of Southern and Central Nevada.

There was a little heat early in the month, as Laughlin logged 74 degrees and Amargosa Valley Garey 73, far below the State December record high of 91 degrees recorded at Las Vegas twice in 1910.

PRECIPITATION

Except for much of the Humboldt River Watershed and a little of the Owyhee, December was yet another drier than normal month. In fact, more than half of the Silver State had less than 1/2 the normal precipitation. In the critically dry watersheds on the eastern slopes of the Sierra Nevada this December produced only 1/4 to 1/3 of normal rain/snow water. The story was similar in the Toiyabe, Toquima and Monitor Range Watersheds of Central Nevada and the Schell Creek and Snake Ranges of Eastern Nevada. The Spring Mountains of Southern Nevada fared a little better as 3/4 or more of normal precipitation fell. In fact, the two wettest reporting locations in Nevada this month were on Mt. Charleston, at the Fire Stations at Kyle Canyon, where 2.10" fell, and at Lee Canyon 1.90." Most surrounding areas received no precipitation. In the Northeast, the west slopes of the Ruby Mountains had a little above normal precipitation, while the eastern side was well below normal. In the Owyhee Drainage the Jarbidge Area was just a little below long-term normals with 1.90" measured by new observer Betsy Williams just north of Jarbidge, and 1.65" in town. The new Owyhee observers, the 4th Grade Class at the Owyhee School, measured 1.69", or a little above the December normal. The eastern portion of the Owyhee Drainage (e.g. the Salmon Falls River Area) was much drier than normal.

SUNSHINE, WIND & EVAPORATION

Sunshine hours were above normal Statewide, with well above normal amounts in dry Las Vegas (91% vs. normal of only 78%), and nearby dry Reno (73% and a 69% normal). Eastern and Northern Nevada had a little more sun than usual.

Wind speeds averaged near normal in the South and East, but below normal in the rest of the State. Peak wind gusts reached the 60-70 mph range in the Reno area on the 18th, and 70-80 mph atop nearby Slide and Peavine Mountains the same day.

Only the Boulder City evaporation pan operated all month, and even that was iced-over for several days during the record cold snap. It is estimated that about 3" of pan evaporation occurred, near the normal for December.

John W. James
State Climatologist

ALL TIME MINIMUM TEMPERATURES
December 1990

<u>Location</u>	<u>December</u> <u>1990</u>	<u>Previous</u> <u>Low</u>	<u>Month</u>	<u>Years of</u> <u>Record</u>
Mountain City	-46	-40	Jan 1962	50+
Beowawe	-43	-42	Dec 1924	102
Deeth	-42	-36	Jan 1963	50-
Vya	-42	-33	Dec 1972	50-
Gibbs Ranch	-38	-33	Feb 1982	50-
Winnemucca	-37	-36	Jan 1937	113
Wells	-36	-32	Feb 1949	73
Ruth	-34	-33	Dec 1972	50+
Ruby Lake	-29	-26	Jan 1957	51
Jarbridge	-28	-22	Jan 1937	50-
Metropolis	-25	-12	Feb 1985	50-
Mina	-23	-22	Jan 1890	101
Virginia City	-12	-11	Dec 1972	50-
Pahrump	-2	6	Feb 1989	50-
Desert NWR	3	8	Jan 1963	51
Logandale	7	8	Jan 1937	50-
Boulder City	9	11	Jan 1937	60

*Other Dec 1990 -40 or below: Wildhorse Reservoir -42
Pine Valley -40

Lowest December 1990

Mountain City -46

Lowest Any Previous December

San Jacinto -45 Dec 1924

Lowest Temperature For Any Month

San Jacinto -50 Jan 1937
Mountain City -46 Dec 1990
San Jacinto -45 Dec 1924 & Jan 1937

WATER YEAR PRECIPITATION

October 1, 1990--December 31, 1990

Southern Nevada

25% of normal

Tahoe-Truckee, Carson, Walker

30% of normal

Central Nevada

60% of normal

Owyhee

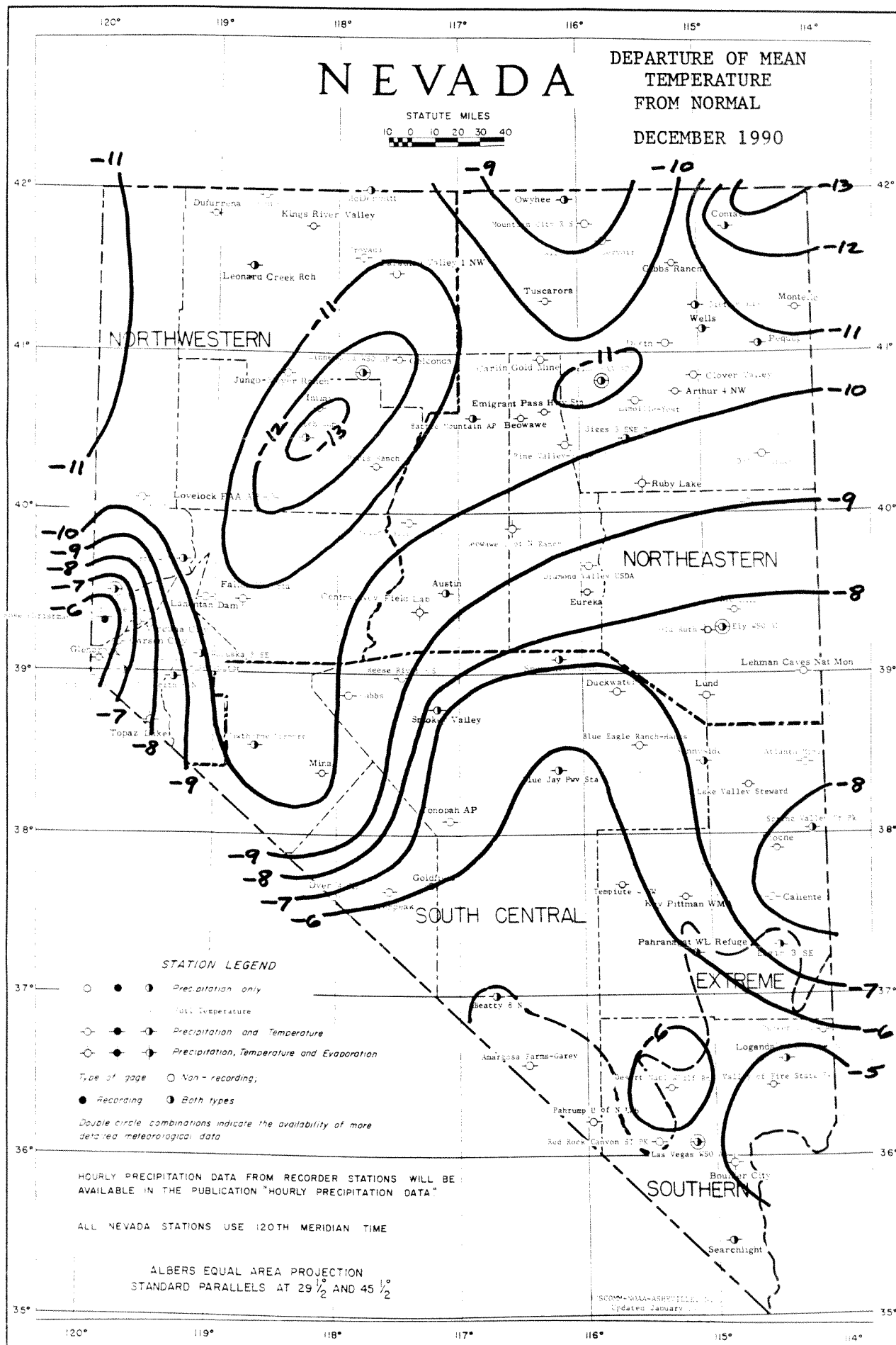
60% of Normal

Humboldt

70% of normal

Overall State Average

50% of normal



NEVADA

PERCENTAGE OF NORMAL
PRECIPITATION

WATER YEAR 1990-91

(OCT. 1, 1990--DEC. 31, 1990)

STATUTE MILES

